

What is claimed is:

1. In a screwdriver with ratchet mechanism and including a base assembly having a longitudinal axis, a gear rotatably supported in said base assembly on said axis, pawl mechanism movably disposed on and being included in said base assembly for selective drive engagement with said gear and said base assembly, and an annular cap releasably connected with said base assembly and aligned on said axis and being rotatable on said base assembly about said axis and being arranged for disengaging said pawl mechanism from said gear upon rotation of said cap about said axis and being movable off said base member in a direction parallel to said axis, the improvement comprising:

said base assembly and said cap respectively supporting a first set of mutually and releasably engageable contacting surfaces in contact with each other in a circular direction about said axis for limiting the rotation of said cap about said axis,

an intervening member operatively interposed between said base assembly and said cap and with said intervening member and said cap supporting a second set of mutually and releasably engageable contacting surfaces in contact with each other in the direction parallel to said axis for restraining said cap against removal from said base assembly, and

said intervening member and said cap supporting a third set of mutually and releasably engageable contacting surfaces in contact with each other in a circular direction about said axis for selective rotational releasable restraint of said cap on said base assembly in at least two rotated positions of said cap.

2. The screwdriver with ratchet mechanism as claimed in claim 1, including:

a spring disposed between said base assembly and said intervening member for releasably positioning said

intervening member engaged between said base assembly and said cap.

3. The screwdriver with ratchet mechanism as claimed in claim 2, including:

said screwdriver having an access opening extending into communication with said intervening member for facilitating moving said intervening member against said spring and thereby release said intervening member from engagement relative to said cap.

4. The screwdriver with ratchet mechanism as claimed in claim 3, wherein:

said access opening is a space between said cap and said base assembly.

5. The screwdriver with ratchet mechanism as claimed in claim 1, wherein:

said first set of said contacting surfaces includes a surface on said pawl mechanism.

6. The screwdriver with ratchet mechanism as claimed in claim 1, wherein:

said cap is rotationally snugly piloted on said base assembly by having circular surfaces spaced apart in the axial direction along said cap for stability of said cap on said base assembly.

7. In a screwdriver with ratchet mechanism and including a base assembly having a longitudinal axis, a gear rotatably supported in said base assembly on said axis, pawl mechanism movably disposed on said base assembly for selective drive engagement with said gear and said base assembly, and an annular cap releasably connected with said base assembly and aligned on said axis and being rotatable thereon about said axis and being arranged for disengaging said pawl mechanism

from said gear upon rotation of said cap about said axis, the improvement comprising:

a member movable radial to said axis and being operatively interposed between said base assembly and said cap and respectively presenting with said base assembly a first set of mutually and releasably engageable contacting surfaces in contact with each other in a direction parallel to said axis for releasably restraining said cap in said parallel direction and relative to said base assembly, and

said movable member and said base assembly presenting a second set of mutual and releasably engageable contacting surfaces in contact with each other in a circular direction about said axis for selective rotational releasable restraint of said cap relative to said base assembly in at least two rotated positions of said cap.

8. The screwdriver with ratchet mechanism as claimed in claim 7, including:

a spring between said base assembly and said movable member for releasably positioning said movable member into engagement between said base assembly and said cap.

9. The screwdriver with ratchet mechanism as claimed in claim 8, including:

said screwdriver having an access opening extending into communication with said movable member for facilitating moving said movable member against said spring and thereby release said movable member from engagement relative to said cap.

10. The screwdriver with ratchet mechanism as claimed in claim 9, wherein:

said access opening is a space between said cap and said base assembly.

11. The screwdriver with ratchet mechanism as claimed in claim 7, wherein:

said cap is rotationally snugly piloted on said base assembly with annular pilot surfaces spaced apart in the axial direction along said cap.

12. In a screwdriver with ratchet mechanism and including a base assembly having a longitudinal axis, a gear rotatably supported in said base assembly on said axis, pawl mechanism movably disposed on said base assembly for selective drive engagement with said gear and said base assembly, and an annular cap releasably connected with said base assembly and aligned on said axis and being rotatable on said base assembly about said axis and being arranged for disengaging said pawl mechanism from said gear upon rotation of said cap about said axis and being movable off said base assembly in a direction parallel to said axis, the improvement comprising:

said cap having a groove facing radially inwardly toward said base assembly,

a slideable member on said base assembly and movable radially to said axis and being operatively interposed between said base assembly and said cap and extending into said groove for restraining said cap against movement off said base assembly and in the direction parallel to said axis,

said cap having pockets spaced circularly around said cap and intersecting said groove, and

said slideable member selectively extending into and out of said pockets upon rotation of said cap on said base assembly for selective rotational releasable restraint of said cap on said base assembly and about said axis in at least two rotated positions of said cap.

13. The screwdriver with ratchet mechanism as claimed in claim 12, including:

a spring between said base assembly and said slideable member for releasably holding said slideable member in engagement between said base assembly and said cap.

14. The screwdriver with ratchet mechanism as claimed in claim 13, including:

said screwdriver having an access opening extending into communication with said slideable member for facilitating moving said slideable member against said spring and out of said pockets and thereby release said slideable member from engagement relative to said cap.

15. The screwdriver with ratchet mechanism as claimed in claim 14, wherein:

said access opening is a space between said cap and said base assembly.

16. The screwdriver with ratchet mechanism as claimed in claim 12, wherein:

said cap is rotationally snugly piloted on said base assembly with annular surfaces spaced apart in the axial direction along said cap.

17. The screwdriver with ratchet mechanism as claimed in claim 12, wherein:

said groove is defined by two spaced-apart end walls for presenting a limited length to said groove and two spaced-apart rotation stops for said cap.

18. In a screwdriver with ratchet mechanism and including a base assembly having a longitudinal axis, a gear rotatably supported in said base assembly on said axis, pawl mechanism movably disposed on said base assembly for selective drive engagement with said gear and said base

assembly, and an annular cap releasably connected with said base assembly and aligned on said axis and being rotatable on said base assembly about said axis and being arranged for disengaging said pawl mechanism from said gear upon rotation of said cap about said axis and being movable off said base assembly in a direction parallel to said axis, the improvement comprising:

one of said cap and said base assembly having a groove facing radially relative to said axis,

a slideable member operatively interposed between said base assembly and said cap and extending into said groove for restraining said cap against movement off said base assembly in the direction parallel to said axis,

one of said cap and said base assembly having a plurality of pockets spaced circularly around said axis and intersecting said groove, and

said slideable member selectively movable into and out of said pockets upon rotation of said cap on said base assembly for selective rotational releasable restraint of said cap on said base assembly and about said axis in at least two rotated positions of said cap on said base assembly.

19. The screwdriver with ratchet mechanism as claimed in claim 18, including:

a spring between said base assembly and said slideable member for releasably positioning said slideable member in said pockets.

20. The screwdriver with ratchet mechanism as claimed in claim 19, including:

said screwdriver having an access opening extending into communication with said slideable member for facilitating moving said slideable member against said spring and out of said pockets and thereby release said slideable member from restraining said cap from movement off said base

assembly.

21. The screwdriver with ratchet mechanism as claimed in claim 20, wherein:

said access opening is a space between said cap and said base assembly.

22. The screwdriver with ratchet mechanism as claimed in claim 18, wherein:

said cap is rotationally snugly piloted on said base assembly with annular surfaces spaced apart in the axial direction along said cap.

23. The screwdriver with ratchet mechanism as claimed in claim 18, including:

a spring operative on said slideable member for urging said slideable member into said groove, and

said slideable member being accessible from the exterior of said screwdriver for accessing said slideable member and thus facilitate movement of said slideable member out of said groove and thereby release said cap from both rotational and axial movement restraint relative to said base assembly.

24. The screwdriver with ratchet mechanism as claimed in claim 18, including:

and said cap and said base assembly having mutually contacting surfaces, in addition to said slideable member, for limiting relative rotation of said cap on said base assembly.

25. The screwdriver with ratchet mechanism as claimed in claim 18, including:

said slideable member and said groove having planar surfaces in contact with each other for the restraining of said cap against movement off said base assembly, and

said slideable member and one of said base assembly and

said cap having arcuate surfaces in contact with each other at said pockets for the rotational restraint of said cap on said base assembly.

26. The screwdriver with ratchet mechanism as claimed in claim 18, including:

a portion of said slideable member being movable into said pockets and said portion and said pockets being arcuate in configuration for self release from each other upon rotation of said cap on said base assembly.

27. The screwdriver with ratchet mechanism as claimed in claim 18, wherein:

said groove is defined by two spaced-apart end walls for presenting a limited length to said groove and two spaced-apart rotation stops for said cap.

28. A method pertaining to a ratchet screwdriver having an elongated axis of controlling rotational and axial movement of a cap on a ratchet screwdriver having a base assembly and a pawl mechanism and a cap axially movable and rotatable on the base assembly and operative to actuate the pawl mechanism upon rotation of the cap, the steps comprising:

interposing a movable restrainer between said base assembly and said cap and having said restrainer movable radially relative to said axis for restraining said cap against both rotational and axial movement relative to said base assembly when said restrainer is in a first position relative to said base assembly,

applying a spring against said restrainer for yieldingly urging said restrainer into said first position, and

providing in the screwdriver an access opening in communication with said restrainer and depressing said restrainer radially relative to said axis and against said spring for urging said restrainer away from said first



position and into a second position to thereby release and remove said cap from both the rotation and axial movement restriction relative to said base assembly.

29. The method pertaining to a ratchet screwdriver, as claimed in claim 28, wherein:

mounting said cap to encircle said base assembly and mounting said restrainer on said base assembly and have it extend into contact with said cap in said first position and be movable radially inwardly toward said axis, and

depressing said restrainer radially inwardly to said second position for the release of said cap.

30. The method pertaining to a ratchet screwdriver, as claimed in claim 28, including:

initially forming a plurality of holes in said cap and extending parallel to said axis, and

subsequently forming a groove in said cap to intersect said holes and having said holes and said groove respectively receive said restrainer for respective rotational positioning and axial restraint of said cap relative to said base assembly.